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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,403	03/25/2004	Hideaki Shibata	2004_0490	5270

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EXAMINER	
COUSO, JOSE L	

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/808,403	SHIBATA ET AL.	
	Examiner	Art Unit	
	Jose L. Couso	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *57-68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *57-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/623,397.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/25/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> **(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.**

2. Claims 57-68 are rejected under 35 U.S.C. 102(b) as being anticipated by Masuda et al. (U.S. Patent No. 5,398,078).

With regard to claim 57, Masuda describes dividing an input image signal into local regions corresponding to individual local regions of the image (see figure 1, element 11 and refer for example to column 5, lines 34-37, Masuda describes dividing the image into blocks each having 8 by 8 pixels, these blocks correspond to applicant's individual local regions of the image); deciding a filter characteristic for each local region of the input image signal on the basis of image feature data of each local region (see figure 1, elements 16, 20-22 and 24 and figures 2A-C, and refer for example to column 6, line 33 through column 8, line 17); performing adaptive filtering (see figure 1, element 18 and refer for example to column 5, line 53 through column 6, line 32); and coding the image signal for each local region (see figure 1, element 5 and refer for example to column 10, lines 47-28). With regard to deciding a filter characteristic for each local region of the input image signal on the basis of image feature data of each local region the examiner would like to point out that element 18 in figure is described as an adaptive quantization control circuit, the decision of this circuit corresponds to applicant's "deciding a filter characteristic" for the following reasons. Element 18 first obtains a measure of activity of a block to be processed by using the relation of the

block to other adjacent blocks, this measurement corresponds to a filter characteristic since it is on the basis of image feature data of each local region, i.e. the block to be processed. Masuda then utilizes the various characteristics obtained to adaptively control the quantization of the image, this corresponds to applicant's "performing adaptive filtering".

As to claim 58, Masuda describes dividing an input image signal corresponding to an image into image signals corresponding to individual local regions of the image (see figure 1, element 11 and refer for example to column 5, lines 34-37, Masuda describes dividing the image into blocks each having 8 by 8 pixels, these blocks correspond to applicant's individual local regions of the image); deciding a filter characteristic for each local region of the input image signal on the basis of the frequency distribution of image feature data of each local region over a predetermined period (see figure 6, elements 16, 20-24, figures 2A-C and figure 5, and refer for example to column 6, line 33 through column 8, line 40); performing adaptive filtering (see figure 1, element 18 and refer for example to column 5, line 53 through column 6, line 32); and coding the image signal for each local region on the basis of the decided filter characteristic (see figure 1, element 14 and refer for example to column 5, lines 41-52). With regard to deciding a filter characteristic for each local region of the input image signal on the basis of image feature data of each local region the examiner would like to point out that element 18 in figure is described as an adaptive quantization control circuit, the decision of this circuit corresponds to applicant's "deciding a filter characteristic" for the following reasons. Element 18 first obtains a measure of activity of

a block to be processed by using the relation of the block to other adjacent blocks, this measurement corresponds to a filter characteristic since it is on the basis of image feature data of each local region, i.e. the block to be processed. Masuda then utilizes the various characteristics obtained to adaptively control the quantization of the image, this corresponds to applicant's "performing adaptive filtering". Figure 5 and figure 6, element 23, and column 8, lines 18-40 explains how the usage of blocks in the time base direction are used for "deciding a filter characteristic", this corresponds to applicant's "deciding a filter characteristic ... over a predetermined period".

In regard to claim 59, Masuda describes wherein each of the filter characteristic and the quantization characteristic decided for each local region is compensated by comparison between itself and that obtained by averaging filter characteristics or quantization characteristics of plural local regions adjacent to the target local region (refer for example to column 6, lines 33-52). Masuda describes using various block activity measures for comparison purposes, including using "the mean value of values of the pixels in the block and values of the respective pixels used" and "differences between adjacent pixels", this corresponds to applicant's "averaging filter characteristics or quantization characteristics of plural local regions adjacent to the target local region" since a mean value can be considered an averaging and the adjacent pixels which are used in Masuda are in plural local regions adjacent to the target local region (as is clearly illustrated in figures 2A-C.

With regard to claim 60, Masuda describes wherein the image feature data of each local region is at least one of the following data: the average of absolute difference

in luminance signals between adjacent pixels, the average of absolute difference in color-difference signals between adjacent pixels, the value of average luminance signal, the value of average color-difference signal, the variance of luminance signal, the variance of color-difference signal, the value representing the amount of motion, and representative vector data in color space (see figure 14, element 86 and 89, and figure 23, element 234, and refer for example to column 12, line 50 through column 13, line 13 and column 18, lines 30-45). Since the claim requires "at least one of the following data" and Masuda provides for "the value representing the amount of motion", Masuda meets the claim requirements.

As to claim 61, Masuda describes wherein the filter characteristic is adaptively decided according to the image feature data of each local region and a control signal supplied from the outside (refer for example to column 6, lines 30-52, this portion of Masuda describes that the filter characteristic is adaptively decided for each local region). Masuda describes (in column 5, line 53 through column 6, line 29), that there is "a preset value" used as a threshold for changing the quantization step size so as to enhance the image quality and increase the generated code amount to the set code rate. Masuda also describes (in column 6, lines 42-55) that there quantization step size is set to four different levels. The preset value and the set levels are obtained before operations commence and therefore must be supplied from outside, which reasonably corresponds to applicant's control signal supplied from the outside.

With regard to claim 62, Masuda describes wherein the control signal supplied from the outside is at least one of the following values: the accumulated value of

absolute value of frame or field pixel difference over an N frame period of the input image signal, the accumulated value of quantity of coded data over an M frame period, and the ratio of quantity of coded data in each frame (refer for example to column 5, line 65 through column 6, line 12, in this portion Masuda describes that the preset value is utilized to control the generated code amount and keep it within the set code rate. Masuda also discusses the time base relationship between the inter-frame prediction and the plurality of frames in order to keep within preset values the quantizing step size. Since the set code rates are different for inter-frame and intra frame, this preset value controls the ratio of quantity of coded data in each frame. The claim requires "at least one of the following values" and Masuda provides for a preset value which controls the ratio of quantity of coded data in each frame, Masuda meets the claim requirements.

In regard to claim 63, Masuda describes recording a coded data sequence (see figure 14, element 98 and refer for example to column 13, lines 38-39); and at the time of reproduction, decoding the coded data sequence, and subjecting each local region of the decoded image signal to adaptive filtering on the basis of the image feature data of the decoded local region (see figure 14, elements 100-105 and refer for example to column 13, lines 40-65).

With regard to claim 64, Masuda describes wherein each of the filter characteristic and the quantization characteristic decided for each local region is compensated by comparison between itself and that obtained by averaging filter characteristics or quantization characteristics of plural local regions adjacent to the target local region (refer for example to column 6, lines 33-52). Masuda describes using

various block activity measures for comparison purposes, including using "the mean value of values of the pixels in the block and values of the respective pixels used" and "differences between adjacent pixels", this corresponds to applicant's "averaging filter characteristics or quantization characteristics of plural local regions adjacent to the target local region" since a mean value can be considered an averaging and the adjacent pixels which are used in Masuda are in plural local regions adjacent to the target local region (as is clearly illustrated in figures 2A-C.

As to claim 65, Masuda describes wherein the image feature data of each local region is at least one of the following data: the average of absolute difference in luminance signals between adjacent pixels, the average of absolute difference in color-difference signals between adjacent pixels, the value of average luminance signal, the value of average color-difference signal, the variance of luminance signal, the variance of color-difference signal, the value representing the amount of motion, and representative vector data in color space (see figure 14, element 86 and 89, and figure 23, element 234, and refer for example to column 12, line 50 through column 13, line 13 and column 18, lines 30-45). Since the claim requires "at least one of the following data" and Masuda provides for "the value representing the amount of motion", Masuda meets the claim requirements.

In regard to claim 66, Masuda wherein the filter characteristic is adaptively decided according to the image feature data of each local region and a control signal supplied from the outside (refer for example to column 6, lines 30-52, this portion of Masuda describes that the filter characteristic is adaptively decided for each local

region). Masuda describes (in column 5, line 53 through column 6, line 29), that there is "a preset value" used as a threshold for changing the quantization step size so as to enhance the image quality and increase the generated code amount to the set code rate. Masuda also describes (in column 6, lines 42-55) that there quantization step size is set to four different levels. The preset value and the set levels are obtained before operations commence and therefore must be supplied from outside, which reasonably corresponds to applicant's control signal supplied from the outside.

With regard to claim 67, Masuda describes wherein the control signal supplied from the outside is at least one of the following values: the accumulated value of absolute value of frame or field pixel difference over an N frame period of the input image signal, the accumulated value of quantity of coded data over an M frame period, and the ratio of quantity of coded data in each frame (refer for example to column 5, line 65 through column 6, line 12, in this portion Masuda describes that the preset value is utilized to control the generated code amount and keep it within the set code rate. Masuda also discusses the time base relationship between the inter-frame prediction and the plurality of frames in order to keep within preset values the quantizing step size. Since the set code rates are different for inter-frame and intra frame, this preset value controls the ratio of quantity of coded data in each frame. The claim requires "at least one of the following values" and Masuda provides for a preset value which controls the ratio of quantity of coded data in each frame, Masuda meets the claim requirements.

In regard to claim 68, Masuda describes recording a coded data sequence (see figure 14, element 98 and refer for example to column 13, lines 38-39); and at the time

of reproduction, decoding the coded data sequence, and subjecting each local region of the decoded image signal to adaptive filtering on the basis of the image feature data of the decoded local region (see figure 14, elements 100-105 and refer for example to column 13, lines 40-65).

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jose L. Couso whose telephone number is (703) 305-4774. The examiner can normally be reached on Monday through Friday from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-8576.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jlc
November 3, 2004

JOSE L. COUSO
PRIMARY EXAMINER